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Insert Student Here: Why Content Area Constructions of Literacy Matter for Pre-service Teachers

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Abstract

This article explores content area pre-service teacher beliefs about disciplinary knowledge, perceptions of effective content area teaching, and existing beliefs about how to integrate literacy into the content areas. Ten pre-service teachers across ten secondary content areas were asked to describe three important variables in secondary teaching: 1) the knowledge of their content area, 2) characteristics of a successful content area teacher, and 3) literacy activities that would optimally convey disciplinary knowledge to students. Content area responses to the first two prompts yielded comparatively static, teacher-centered notions of knowledge and teaching. However, responses to the third prompt indicated at least partial resistance to transmission-style teaching and more student-centered pedagogies. The author asserts that content area literacy courses can be a contact zone in which pre-service teachers consider and reconsider how disciplinary epistemology maps onto effective content area literacy instruction.

Introduction

Teaching content area literacy courses to pre-service secondary teachers is a messy and difficult business. First, although presumably secondary pre-service teachers already have some of expertise with the subject matter(s) they are training to teach, most have limited experience communicating that knowledge to adolescents who may not have an intrinsic interest in the subject. Second, a problematic

situation occurs when interdisciplinary pre-service teachers come into a content area course expecting a bag of one-size-fits-all reading and writing strategies. Reading, writing, and critical literacy strategies are not necessarily exportable across disciplines because content area texts and tasks vary widely (Draper, 2008). Content area experts may use literacy (often dissimilar than traditional school-taught reading and writing) in different ways than do content area literacy instructors modeling a particular literacy strategy (Seibert & Draper, 2008). Third, content area literacy coursework may rest on pedagogical frameworks invisible and alien to pre-service teacher's experiences in content area classrooms. Literacy courses, in contrast to many mathematics courses, for example, tend to endorse constructivist pedagogies not generally embraced in actual secondary classrooms (Draper, 2002).

When content area literacy instructors do not understand valued disciplinary literacy practices, they do not prepare teachers of specialized subjects to meet the needs of students who will likely struggle with the reading and writing required in particular content areas (Shanahan & Shanahan, 2008). This article is an attempt to understand the role that highly divergent content area literacy practices plays in the formation of pedagogy for pre-service secondary teachers. In this article, I begin by situating important variables of effective content area literacy instruction within three classification systems for knowledge, teaching, and literacy. Next, I examine how metaphors for teaching and literacy often collide and contradict each other using by way of example the voices of ten pre-service secondary teachers training in ten different content areas. Finally, I discuss how content area literacy courses can become a contact zone for future secondary teachers to reexamine content area literacy tasks and texts. This reexamination can aid pre-service teachers in challenging static notions of knowledge and teaching.

Constructs of Knowledge, Teaching, and Literacy

Labaree (1996) describes how knowledge is classified as a series of binary opposites. He makes distinctions in "*hard* versus *soft* and *pure* versus *applied*" knowledge (Becher, 1989; Labaree, 1996, p. 8-9). Labaree (1996) observes,

Hard disciplines (which claim to produce findings that are verifiable, definitive, and cumulative) outrank soft disciplines where interpretation is the central problem and where findings are always subject to debate and reinterpretation by others. Likewise, pure intellectual pursuits (which are theoretically-oriented and abstracted from particular contexts) outrank those that are applied (where work is more practical and more closely connected to context-bound needs). (pp. 8-9)

Mathematical properties and scientific laws could be labeled as “harder” knowledge, as would any knowledge that would have to be replicated, whereas reader response theories could be labeled “softer” knowledge because interpretation would be more important than arriving at a correct answer. In addition, a national curriculum could be labeled “pure” knowledge, whereas a curriculum dependent on local concerns could be labeled “applied” knowledge.

Labaree (1996) also asserts that the content of teacher education courses is generally soft and applied knowledge giving schools of education a double whammy of low status in the Academy. However, secondary education majors also possess the knowledge that composes their major(s) and/or minor(s). Secondary pre-service teachers may coexist in two (or more) worlds of knowledge and may not be consciously aware of how their knowledge frameworks affect views of good teaching or content area literacy instruction.

Subject matter knowledge may shape notions of job performance and assessment activities, creating stereotypes of “the art teacher” or “the math teacher.” In their work on disciplinary boundaries situating teaching practices, for example, McLaughlin and Talbert (2001) noted that “math teachers are significantly more likely than are teachers of English, social studies, or science to see their subject matter as static and their job as routine” (pp. 56-57).

Metaphors for teaching and literacy may help make disciplinary subcultures explicit as they not only help constrain and categorize ways of thinking, but they allow creative scope to think in new ways about thinking. Although highly abstract, metaphors are practical when developing frameworks for constructions of good teaching.

O’Brien, Moje, and Stewart (2001) describe three metaphors for teaching: teaching as telling and controlling, teaching as celebrating experience, and teaching as transforming and transgressing. Transmission style teaching, where teachers proscribe discrete sets of disciplinary knowledge to be learned by students, is encapsulated within the metaphor of teaching as telling and controlling. Teaching as telling and controlling may be a response to time and organizational constraints caused by school, district, state, and national benchmarks and standards. Teaching as celebrating experience allows students to explore their individual experiences while deemphasizing the authority of teacher and text. This expressivity teaching metaphor foregrounds personal identity but backgrounds the influences of class, race, or other sociocultural factors that influence individuals. Teaching as celebrating experience, therefore, tends to celebrate the personal identities of dominant cultures. The metaphor of teaching as transforming and transgressing addresses marginalized social groups so that students develop a critical consciousness of oppressed groups (hooks, 1994). O’Brien, Moje, and Stewart (2001) note that teachers

who operate within the metaphor of transforming and transgressing must fight existing dominant ideologies, school systems, and even the knowledge construction of disciplinary experts.

Several metaphors for literacy exist that shape or are shaped by the aforementioned metaphors of teaching. Sylvia Scribner (1984) describes three of these: literacy as adaptation, literacy as power, and literacy as a state of grace. Literacy as adaptation emphasizes functional literacy skills, which allow individuals to operate in daily life, particularly in school and vocational settings. This metaphor reinforces the notion that reading, writing, and critical thinking is necessary for economic survival and centers the knowledgeable teacher at the middle of instructional practices. Scribner's (1984) second metaphor, that of literacy as a state of grace, offers "special powers" to those who are literate such as opportunities to become more cultured or knowledgeable, a process of self-actualization (p. 209). This metaphor centers the gifted reader, writer, or critical thinker at the center of the curriculum. Scribner's (1984) third metaphor, literacy as power, "emphasizes a relationship between literacy and group or community advancement" (p. 209). Within this metaphorical framework, collective reading, writing, and critical thinking ability affords the group opportunities to pool resources, find a representative voice in literacy, and challenge societal norms or practices. This metaphor is consistent with constructivist teaching practices that positions students and their communities at the center of curricular practices.

Within constructs of knowledge, teaching, and literacy certain permutations seem most compatible. Hard and pure knowledge seem to work well with metaphors of teaching as telling and controlling and literacy as adaptation. Soft knowledge with its emphasis on personal interpretation seems to work well with teaching as celebrating experience and literacy as a state of grace. Applied knowledge with its emphasis on particular contexts seems to work well with teaching as transforming and transgressing and literacy as power. But do these permutations hold consistent when pre-service teachers examine their knowledge base, perceptions of good teaching, and content area literacy practices as tools for expanding students' content area knowledge? And at what point in this complicated investigation of constructs do pre-service teachers insert future students into the learning equation?

Context of This Research

The purpose of this research was to probe attitudes of cross-disciplinary pre-service teachers regarding beliefs about the interplay of disciplinary knowledge, good disciplinary teaching, and, ultimately, how to best teach literacy within the boundaries of disciplinary knowledge. Ten pre-service teachers in their early- to

mid-20s enrolled in two summer 2004-2005 content area literacy courses at a large, Midwestern school of education were selected to be interviewed about their beliefs of disciplinary knowledge, good teaching, and good content area literacy practices. All were juniors in a five-year program and their particular school of education was highly regarded having received top rankings for curriculum and instruction several years running in popular news media that ranks colleges and universities. Although the 10 participants had preliminary education coursework prior to being admitted into the College of Education, the literacy course from which they were pulled was their first course of record after acceptance. All participants were working towards completion of temporary teaching certificates to work at the secondary level with the exception of the audiology, art, and music participants who were seeking endorsements to teach at both the elementary and secondary level.

The content area literacy course that grounds this research framed literacy within a sociocultural lens and the belief that adolescents have multiple literacies that have fluctuating currencies when they are reading, writing, listening, and/or speaking that are largely based on social context. Typically, in conjunction with this class, students did literacy tutoring at local urban middle schools for partial completion of the course. However, as the two content area literacy courses that ground this research were conducted during summer months, participants did not spend time in local middle schools but instead read multiple tutoring reports from fellow pre-service teachers who had worked with students in previous semesters. There were two instructors for this course. Because my expertise is in adolescent reading, I facilitated seven class sessions, each lasting approximately 3 hours, centering on vocabulary development and reading research. My co-instructor had considerable expertise in writing instruction and conducted class sessions in this area.

In an attempt to prevent participants from supplying responses they might consider “correct” or regurgitating information they had been directly taught in class, interviews were conducted early in the semester after the second class session. None of the interview questions had been explicitly addressed in class, although in the first session students read case studies of exemplary content area literacy teaching. Ten participants were selected based on content area major and perceived insightfulness and also on availability to complete a 20-30 minute interview between the second and third classes. Pseudonyms were given to the interviewees. Six of the interviewees were female: Crystal, Frannie, Molly, Modi, Renee, and Tia. Four of the interviewees were male: Joel, Jake, Chris, and Dan. Nine interviewees were European-American. One, Tia, was African-American. See Figure 1 for demographic information on the respondents.

Pseudonym	Content Area	Gender	Ethnic Heritage
Molly	Art	Female	White
Frannie	Journalism	Female	White
Dan	Physics and math	Male	White
Jake	Music	Male	White
Joel	English	Male	White
Chris	History	Male	White
Modi	Biology	Female	White
Crystal	Audiology	Female	White
Tia	Family & Consumer Science	Female	African-American
Renee	French	Female	White

Figure 1. Demographic Information of Participants

Four questions were asked of the interviewees (see Figure 2). The first dealt with knowledge, the second with effective teaching of their subject, and the final questions attempted to address how literacy could be used as a tool for teaching disciplinary knowledge in exemplary ways.

1. How does one (or do people) know what to teach in your subject?
 2. Can anyone teach your subject? If not, what special talents or knowledge is needed to teach your subject matter successfully?
 3. Do you see yourself using reading, writing, or critical thinking activities in your classroom? If so, describe such an activity.
 4. What types of reading and writing is most valued in your subject area?

Figure 2. Interview Questions

The four questions were scaffolded in an attempt to trace pre-service perceptions describing how the organizational frameworks of subject matter knowledge (epistemology) map onto notions of good subject matter teaching and content area classroom literacy practices. These questions were asked in order to construct theory about pre-service teacher interpretations regarding the relationship of content area knowledge, good teaching, and literacy instruction (Pressley & McCormick, 2007). The author wondered if typical permutations of knowledge and metaphors for teaching and literacy would emerge in interviews. For example, would descriptions

of pure and hard knowledge correspond with descriptions of good teaching as telling and controlling and descriptions of valuable literacy activities as literacy as adaptation. Questions were influenced by previous research mentioned at the beginning of this article that observed that content area literacy teaching pedagogies often suffer disconnects with teaching pedagogies of content area teachers based on differing understandings of content area knowledge structures that trickle down to classroom teaching practices (Draper, 2002).

All recorded interviews were transcribed and I then looked for meaningful clusters of responses for each question and patterns of responses across questions and developed themes from transcripts (see Figure 3). I used the previously operationalized existing constructs of knowledge and metaphors for good teaching and literacy instruction as basic organizational themes, but used responses to add nuance and challenges to existing binaries of knowledge and metaphors.

Pseudonym	Content Area	Knowledge Construct	Teaching Metaphor(s)	Literacy Metaphor(s)
Molly	Art	Hard & Applied	Celebrating Experience	Adaptation State of Grace
Frannie	Journalism	Hard & Applied	Telling & Controlling	Adaptation
Dan	Physics and math	Hard & Applied	Telling & Controlling	State of Grace
Jake	Music	Soft then Hard	Celebrating Experience	State of Grace
Joel	English	Soft then Hard	Celebrating Experience	State of Grace
Chris	History	Soft then Hard	Telling & Controlling	State of Grace
Modi	Biology	Soft & Applied	Telling & Controlling	State of Grace
Crystal	Audiology	Soft & Applied	Celebrating Experience	Adaptation
Tia	Family & Consumer Sciences	Soft & Applied	Transforming & Transgressing	State of Grace
Renee	French	Soft & Applied	Celebrating Experience	Adaptation

Figure 3. Participant Responses by Theme

Knowledge Constructs Hard and Applied Knowledge: Replicating Professionals

Two of the participants described the knowledge of their content area as a combination of hard and applied knowledge, knowledge accumulated by experts in their fields over the years but yet applicable to the lives of students. For these pre-service teachers, it was the job of the student to replicate the activities of practitioners and it was the job of the teacher to relate and explicate categorical knowledge structures for students. For example, Molly (art), described artistic knowledge in terms of concepts developed by artists over the centuries that needed to be made applicable to individual students. She observed art as hard knowledge when she noted:

There are five basic principles of art including line, shape, and texture. These terms are the frameworks that artists look to when attempting to analyze a work of art or creating and defining their own art....

And yet, Molly continued, students learned the hard knowledge of art in part by doing art, fitting the applied construct of knowledge. She added:

If I was to design a beginning drawing class, I would want the class to be largely hands-on, so the students would immediately start doing art. I would begin the year by having students draw in order for them to learn the importance of using space. This assessment would give me an idea of the talent level of my students and serve as the basis for the rest of my curriculum.

Like Molly, Frannie (journalism), believed that students should replicate existing journalistic artifacts, especially learning how to mimic the writing and layout of existing newspaper articles. As she observed, "I guess student reporting, interviewing, and writing in a journalistic format is an attempt to do what journalists do." Both Molly and Frannie expressed that students should learn the forms and structures primarily through reenactment of given structures.

Soft Knowledge That Becomes Hard Knowledge: Replicating Knowledge through Expert Content Area Consensus

Other pre-service teachers noted that knowledge of their discipline tended to be softer, more interpretive knowledge that became canonized pure knowledge through large scale consensus. Widespread consensus meant the knowledge tended to be reproduced over time in classrooms and frequently become hard knowledge to the detriment of other knowledge that did not receive such widespread attention.

Jake (music), described proscribed national standards as setting the teaching curricula for K through 12th-grade music teachers while the history and English pre-service teachers observed that society and content area experts shaped the knowledge that is given preferential treatment in schools. Jake observed that state and national standards reflected community concerns that might change over time. He regarded standards in a positive light, a sign of the professionalization of music teachers:

For music we're very lucky to have national standards set out and defined.

About ten years ago every school district set out to have their school's goals and music curriculum line up with the national standards for music....There's nine of them, and they cover everything from the ability to read music all the way to the ability to write and improvise your own music. I think these standards tend to be driven by cultural and societal views that change over time.

Joel (English), observed that the literary canon was the pragmatic result of limited time to teach texts. As Joel observed, "You are always going to have some kind of canon because you can only teach a finite number of pieces. Actually, the literary canon is not open to much debate because what you already have read tends to be emphasized in classrooms." Chris (history), observed a similar pattern in knowledge reproduction in his discipline when he observed, "The knowledge that is selected to be studied from the past tends to favor large events which are, in turn, passed down to future generations. If you're doing American History, everybody learns about the Civil War and the world wars."

These three pre-service responses reflected the notion that hard knowledge is more efficient to teach than soft knowledge because it allows teachers across the country to align curricula, conveniently limits classroom texts, and allows teachers to pass down what they learned in high school and college to a new generation, placing the teacher as content area experts in a classroom. In addition, this knowledge is compatible with what the larger society, including the media, considers valuable.

Applied Knowledge: Describing the Way the World Works

Two pre-service teachers – Dan (physics and math), and Modi (biology), - largely described their knowledge base as applied in the sense that it was descriptive of the way the world works. Dan observed that his knowledge base was also hard

in that personal interpretation of knowledge was underplayed and that empirical knowledge was essential:

What's important [in physics] is what you can think of in terms of mechanics.

If it's not something that you can logically figure out, then it's probably not all that important. For instance, if the law of gravity doesn't make sense to you, then you have a problem because that is a very important kind of concept.

In contrast, Modi (biology), saw biology as highly descriptive of the physical world in which her future students lived, a softer view of knowledge that allowed students more scope to insert their lives into her content area. As she explained, "Biology is based on what is, what their [students] lives [are]. Biology explains to us how we are able to live." In these responses, Dan seems to view his knowledge base as purer than Modi's in that the context of students' lives played a less significant role in the teaching and learning of physics than it did in biology.

Soft and Applied Knowledge: Tapping into Students' Lived Experiences

Three pre-service teachers espoused soft and applied views of knowledge, describing the lives of students or local contexts as the origination of content area knowledge. Crystal (audiology), reflected that she would likely frame her therapy around the central question, "What tools does the student need to effectively communicate?"

What I need to know is those survival tactics students need to communicate in their classrooms. My most critical knowledge would be a student's skill level. This would come from referrals from parents and teachers.

Tia (Family and Consumer Sciences), also viewed the curriculum of her discipline as highly malleable. She believed that preexisting issues and the personal experiences of her students should determine what she taught.

If I know that I'm in a school with a lot of teenage pregnancies, then I'd ... really emphasize contraceptive use, or not necessarily that, but just sexuality and the development of a child and fetal alcohol syndrome. Things like that. It's really my discretion and would vary widely by class.

Renee (French), saw knowledge of her discipline centering on the French language itself, the French culture, and the differences between French and American cultures.

You can't teach a language without teaching the culture that it comes from.

If you don't understand the mentality of the people who speak the language, it really gets in the way of understanding the language itself. You can't sift anything out....

I would start teaching about contemporary French society, perhaps focusing on literary or artistic movements to provide elaboration or to put students in the mindset of the French culture. Then I would work backwards historically to trace the mindset of the people to track the trend.

It should be noted that soft and applied responses came from pre-service teachers outside of the four core content areas of math, science, social studies, and language arts, disciplines that may have less proscribed curricula in terms of state expectations, benchmarks, and standards.

Although responses of views of knowledge varied from hard to soft to pure to applied, only five of the pre-service teachers mentioned the role of students when defining content area knowledge: Molly (art), Frannie (journalism), Modi (biology), Crystal (audiology), and Tia (Family and Consumer Sciences). The remaining five mentioned the role of disciplinary or teaching experts, including the professional voices manifested in state standards and benchmarks, culture, and empirical knowledge in constructing knowledge. Such varied responses regarding the structure of content area knowledge suggests that content area literacy teaching that relies largely on teaching reading and writing strategies with the expectation that pre-service teachers will easily implement them in their instruction is foolish. Varied responses also demonstrate that knowledge constructs predicate how literacy is used and valued in content areas classes and that literacy instructors may well need to consult with experts in the content areas about how literacy is used and valued in a particular content area.

Metaphors for Good Teaching

Teachers at the Center of Instruction: Teaching as Telling and Controlling

Views of knowledge affected metaphors of good content area teaching. Most pre-service teachers described good teaching within a metaphorical framework as

telling and controlling, locating teachers and their knowledge base at the center of good teaching. Most of the pre-service teachers glossed over the role of the adolescent in good teaching and the fact that good teaching relies on relationships with adolescents or the accumulation of content area knowledge by adolescent students. Even Modi (biology), who located the lives of students at the center of her curriculum, took on the metaphor of teaching as telling and controlling. In her metaphor she emphasized content area expertise as most fundamental to good teaching:

The key to being able to teach biology is the appropriate knowledge base. As long as they [teachers] have a good background knowledge of the subject, then [a teacher] can teach it, but everyone doesn't have that background knowledge. You have to have broad-range training in general biology, chemistry, biochemistry, genetics, physiology, anatomy.

Chris also emphasized the importance of the history teacher's knowledge base in the teaching of his discipline:

It's possible for most everyone to teach [history], but to be effective I think it requires, first of all, a broad knowledge base in the subject, and, even more importantly, an ability to be adaptable and open-minded about issues because the way we perceive history can change over time.

Frannie was not sure if teacher education classes were necessary to teach journalism. She did note that deep knowledge of journalism certainly was necessary when she observed, "If you have background course work or journalistic experience, I think you could effectively train a journalism teacher. A practicing journalist could probably teach high school students effectively." This response was echoed by Dan, the physics and math pre-service teacher, who was the most open to uncertified teachers being able to teach his disciplines - if they were mathematically knowledgeable, they could teach.

Teaching as Celebrating (Teacher's) Experience

Other participants foreground teacher knowledge as the focus of good teaching but reframed the metaphor of teaching as celebrating experience by observing that at least part of the knowledge teachers were to convey was personal passion for the subject matter. Teaching, therefore, was a means to celebrate love of content area.

Joel (English), observed that a passion for language was paramount for teachers of English to be successful in the classroom.

You have to like to read, and you have to read a lot. Even in the teaching of writing it helps if the teacher is immersed in language because what you do is work with words and pass knowledge of words and how they work in our language. If English teachers do not read and write themselves for their own enjoyment, they are unlikely to have the passion necessary for teaching English well. Students will never get this passion either.

The idea of good teaching celebrating the teacher's experience was also expressed by Jake's (music), response: "If you don't have the passion for it, you really don't have anything that's going to engage your students in it. The teaching of music requires personal investment on the part of the teacher which students pick up."

More Student-Centered Pedagogy: Teaching as Celebrating Experience

Crystal (audiology), described her opinion of good teaching as more clearly aligned with teaching as celebrating the experiences of students.

Audiologists have to have oral and written communication skills and have excellent rapport with student clients. I especially look forward to giving that one-on-one emotional support. You need to be able to relate to students well and understand how emotional circumstances affect communication. Kind of like a mind reader. Kind of like a counselor too.

Molly believed that art teachers play many roles: they should act as practicing artists and art historians, and should celebrate the art of students when she observed, "Art teachers are different from artists because art teachers have to also learn how to draw art from the student. Students have different kinds of art. It's up to us to recognize the kinds of art that exist in students and guide them to go deeper in their own personal art."

Renee (French), observed that student metacognition, making visible to students why learning a foreign language is valuable, was the basis of good teaching:

French teachers have to be able to speak French and be familiar with French culture and society, so they could convey that knowledge to students. They should be able to explain to students why they're learning what they are learning.

Molly and Renee's perceptions of teaching align with their view of knowledge as soft and applied. Crystal (audiology), had previously espoused a view of knowledge as pure and hard. She expressed that as someone who was interested in working in secondary schools, a rarity in her program, personal connections with students would be necessary for speech therapy to be effective. She believed that student motivation would be an important variable for her clientele's success.

Teaching as Transforming and Transgressing (For the Teacher)

Tia (Family and Consumer Sciences), most closely hinted at good teaching as transforming and transgressing, but she too located good teaching at the level of the teacher as someone who could understand his or her students.

You [need] to have an open mind. You cannot be a closed-minded person and try to teach this because you run into so many kinds of people. You don't know what someone else's beliefs are, what they think. You don't want to offend them, but yet instead you want to open up their minds to other possibilities. A closed-minded or conservative person or someone who is just extremely liberal, they couldn't teach this. You have to have a love for people, must want the well-being of society, and should like to talk a lot.

Pre-service teachers tended to locate content area teacher knowledge at the center of their frameworks for good teaching. In fact, only four pre-service teachers even hinted that the existing and future lives of students matter in good teaching: Crystal (audiology), Molly (art), Renee (French), and Tia (Family and Consumer Sciences). Given this prior knowledge, it seems likely that content area coursework that espouses constructivist teaching practices centering on what secondary students already know and bring to classrooms would suffer disconnects with what pre-service teachers already believe about good teaching.

Metaphors for Valued Literacy Activities

When students described valued literacy activities in their disciplines, metaphors became mixed and more complex. Some pre-service teachers demonstrated clearly discernible metaphors of literacy as adaptation, emphasizing the importance of student mastery of those literacy forms that affect everyday life or the potential vocations of students. But many pre-service teachers also began to mention students for the first time when describing valued teaching practices.

Notions of Struggling and Developing Literacy Learners: Literacy as Adaptation

Crystal (audiology), observed that the literacy tasks important to her future high school clientele were content area literacy tasks and everyday communication skills. She articulated that her literacy practices would be structured so that adolescents with communication struggles could adapt to the marketplace:

I would help my students work through assigned work by showing them the necessary logic and order to complete the assignment. For students with general language delay, I would have students replicate stories, specifically reading and summarizing a story and elements of the story such as plot, characters, and setting. How well you can retell a story is a direct correlation with your future economic success.

Renee (French), also took on the metaphor of literacy as adaptation when she observed that in foreign languages the spotlight should be on “language to communicate everyday needs because that’s going to be the most immediate thing they’re going to use.” Frannie (journalism), also seemed to evoke a metaphor of literacy as adaptation when she described how students should do literacy in journalism classes in order to parallel the writing of practicing journalists: “They need to do the critical, objective writing of journalism. Perspective, or point of view, is the single most important concept in journalism.”

In all three interviews that were classified primarily as valuing literacy as adaption, discourse emphasizing the literacy needs of secondary students became apparent. These participants highlighted how mastery of language form and function afforded students the ability to gain additional entries into the workplace and world. Several pre-service teachers, even some participants who classified content area in terms of pure knowledge, observed that literacy activities can afford secondary students opportunities to go against deeply entrenched teaching practices that reinforce teaching as telling and controlling. These teachers particularly railed on the pitfalls of using textbooks to shape what counts as knowledge in their disciplines.

Going Beyond Textbooks: Literacy as a State of Grace

The responses of Modi (biology) and Dave (math and physics) emphasized engaging texts as a tool for deeper personal content area insight.

As Modi noted:

Scientific journals can teach topics such as cloning that can be understood by high school students if the teacher uses the appropriate literacy strategies to break down information. But I don’t like textbooks.

Textbooks tend to be really dull and dry, just giving you straight facts back to back, and I think it's important to include other types of reading in your class. Like a novel *The Double Helix* by Watson and Crick or *Frankenstein*. They're both stories, but they have a lot of science in them...they're [students] going to be more accepting of reading them because there's flow to it instead of just straight facts.

Dan believed that the most typical writing in physics for high school students tended to focus on mathematical correctness, different than the reading and writing he personally preferred that allowed more critical thinking. In the following quote, Dan bemoans the fact that scientific literacy does not often move past the metaphor of literacy as adaptation:

There is one right answer in physics at the high school level, so students tend to focus on the answer rather than thinking about multiple ways it might take to get there. Students don't tend to like problems where you kind of figure what's going on. I've noticed students tend more toward [problems] where you get a concrete number answer. Why that is...is beyond me because, personally, I think the more philosophical aspect of how does this work...is more interesting. Students, particularly students who have taken physics in high school, have had several years of mathematics courses and are used to getting a right answer.

Chris (history), emphasized the importance of directing students' attention back to primary sources and having them write about particular passages, focusing on making inferences and text-to-self connections as a means to foster critical thinking.

They need to read the Constitution and writing about what the founding fathers thought as they composed the original document. They have to read beyond traditional textbooks because it is more valuable to go to the primary source because it's free of other people's interpretations. This allows students to be engaged in material, so they can write about what it means to them....

Chris focused on how literacy as a state of grace could purvey soft knowledge, but Joel (English), discussed how valued school literacy practices should contribute to the literacy practices of non-school lives and should be intrinsically interesting to students:

There's a faulty dichotomy when certain teachers pit popular books and authors that can be bought at Target, like Stephen King, against literacy text. I think the critical question as to what should be valued is what is worthy of being studied? I think we should work with what interests students. Dickens and Shakespeare were extremely popular while they were alive, but my primary struggle will be to engage students in reading in the first place.

For these pre-service teachers, student motivation became an important variable in content area literacy instruction. Student motivation was addressed in text selection and a more interpretive reading of text, which are often incompatible responses with the notions of knowledge that many pre-service teachers described in their first interview question.

Mixing Metaphors: The Complexity of Framing Literacy for a Single Content Area

Mixing literacy metaphors within a content area demonstrated the complexity of framing literacy for one single content area. Molly (art), combined metaphors of literacy as adaptation, using reading and writing activities to join in artistic conversations, with fainter allusions to literacy as a state of grace, the importance of framing existing artistic conversations for personal relevance:

I would definitely have them read and write. They would research particular artists by looking at their personal writings, especially letters in which artists explained their art. I would likely follow that up with asking students to produce similar art with their own twists. I would want students to explain their own work. These are called artist's statements.

Molly's descriptions of valued content area literacy activities reinforce how knowledge of the literacy practices of artists are likely to shape the literacy genres of her students affecting how students would adapt writing traits such as style and organization. Molly's descriptions also seem to hint at the possibility of students going beyond understanding popular artistic genre to reinventing genre using "their own twists." Tia (Family and Consumer Science) echoed Molly's descriptions of valued content area literacy, noting that the point of literacy in her classes would be to apply scientific knowledge to the students' lives.

Jake (music), observed that literacy as a state of grace would introduce other content areas into his music class. "Exposing [students] to literary and architectural genres of a period would reinforce the musical elements from the same period,"

he observed. He also hinted at literacy as power when he suggested, “The music of rebellion could say a lot about the culture, too.”

As these pre-service teachers discussed valuable literacy activities in their content area, they were most likely to include students and their valued non-school literacies in expanding equations of teaching and learning. Some also became interested in interdisciplinary study. When literacy tools for teaching content area knowledge were introduced into explications of good content teaching, participants were most likely to resist static, reproductive notions of teaching. These pre-service teachers began to observe the necessity for constructivist teaching methods in which students brought prior knowledge and personal interpretation to learning tasks, and the importance of using cross-disciplinary texts to engage and motivate students to learn more about content area knowledge (see Figure 2).

What was glaringly missing in these explications, however, was expansion of the metaphor of literacy as power. Participants did not articulate how literacy can be a tool of democracy and social justice.

Discussion

Because the interviews sampled only one person per major, answers rendered may have been highly unrepresentative of typical pre-service teacher views, but the divergent points of view did provide scope for discussion on how knowledge, teaching, and literacy is perceived across content areas.

Disciplinary, reproductive, “hard” knowledge was clearly valued, even by pre-service teachers who espoused “softer,” more interpretive, pedagogy. All respondents felt strongly that they were in possession of specific sets of knowledge that would be valuable to their future students. This knowledge base was generally the primary indicator of good teaching. This is vitally important as currently, some content area literacy theory urges schools of education to transition from teaching content area literacy to adolescent literacy (Stevens, 2002) in an attempt to address the non-school literacies of students and totality of students’ lives. Although the totality of students’ lives and their non-school literacy practices certainly matter, I disagree with such a radical conversion. Content area literacy practices of content area experts represent power in our capitalistic system, which rewards content experts for their specialized literacy expertise and these pre-service secondary teachers know this. It is the teacher’s job to share expert reading, writing, and critical thinking with students and incrementally bring students up to a higher cognitive and critical level.

So how should schools of education train secondary teachers who can more deftly use literacy practices as a tool to purvey content area information? I suggest

this largely has to do with encouraging pre-service secondary teachers to consider outsider perspectives to their discipline. But first, content area literacy instructors must develop a deeper respect for what their students already know. Content area literacy instructors must recognize that the prior disciplinary knowledge of pre-service teachers matter and should be made visible when literacy skills and strategies are modeled and discussed. Pre-service teachers are already inducted into subject specific ways of reading and writing. For math majors, for example, close reading and economy of words when writing a proof is considered “elegant.” In contrast, English majors who read and critique vast novels like *Moby Dick* (Melville, 2008) and *War and Peace* (Tolstoy, 2008) are likely to espouse reader response theories that allow interpretation and insertion of self into reading and writing events. When content area literacy instructors present reading and writing strategies such as anticipation guides and questioning strategies, students should have time to reflect if such literacy practices are transportable or adaptable to their disciplines. Such practices situate content area literacy instructors as co-learners with their students, offering pre-service teachers respect for what they already know.

Second, secondary pre-service teachers must have critical encounters with adolescents who may struggle in the content areas. Good teaching is, after all, not just knowing hard and pure knowledge but also conveying that knowledge to less knowledgeable or motivated others. Pre-service teachers need to know that good content area instruction rests on what students already know, what they need to know, and the literacy tools that enable students to close knowledge gaps. For example, when pre-service teachers from comparatively privileged suburban contexts developed tutor/tutee relationships with adolescents in urban schools, the pre-service teachers were more likely to reflect on best (or better) content area literacy practices (Conley, Kerner, & Reynolds, 2005). In my experience teaching content area literacy courses with tutoring components in urban secondary schools with high percentages of struggling readers, I have seen pre-service teachers develop more complex understandings of adolescent learners and their learning contexts who begin to articulate understandings of literacy as power.

Third, cross-disciplinary relationships that evaluate disciplinary texts and tasks can help content area pre-service teachers recognize that their chosen subject matter is not intrinsically interesting even to highly educated peers. Donahue (2003) describes a content area reading course in which reading apprenticeships were formed between humanities and math and science teachers. As pre-service teachers read the texts of their own and other disciplines, and later completed reading logs on the texts, they discovered that reading strategies are determined by the text and that

one reading strategy most emphatically does not fit all. Donahue's students also learned that, even in subjects purported to be as rigid as math, different perspectives could be derived from common themes. Modeling this activity after the transactional view of reading (Rosenblatt, 1978, 1994), Donahue's (2003) students realized that meaning of text stems from transactions between readers and reading across texts. Ultimately, he noted that, "When teachers wrote across the disciplinary divide separating the humanities from math and science, they were much more likely to reflect on why and how they were reading in addition to what" (Donahue, 2003, p. 4). As teachers read the texts of other disciplines, they were forced into the role of a student in the content area classroom again, a student who was required to deal with content with which they had not yet achieved expertise.

Fourth, content area literacy courses are conducive to reexamination of what counts as a text. As Jake (music) noted, architecture can serve as multimodal texts that offer students valuable insight into music emerging from the same cultural era. Modi (biology) also observed, science fiction or historical novels can relay a great deal about science. Magazines, movies, and Manga can all function as content area texts when carefully aligned with learning targets.

Recently, I have come across the Young Adult novels of John Green, a burgeoning young writer. In Green's (2006) novel, *An Abundance of Katherines*, protagonist Colin Singleton devises a theorem describing why he has fallen in love with 19 girls named Katherine. The appendix breaking down young Colin's theorem is written by Daniel Biss, a math professor at the University of Chicago. Not only was I interested in Colin's romantic adventures, I was also interested in the mathematical explanations of Colin's love life. This text may offer scope for interdisciplinary teaching in English and mathematics subjects.

In Green's (2008) *Paper Towns*, protagonist Quentin Jacobson finds personal relevance to Walt Whitman's poetry and the history of cartography through his cross-country search to find his unrequited love, his next door neighbor. In still another of his novels, *Looking for Alaska*, Green (2005) makes religious and philosophical thought come alive as Miles "Pudge" Halter reflects on the famous last words of the world's great leaders — and on the final days of Alaska Young, the girl down the hall. All three of these novels insert hard and pure content area knowledge into the life of an adolescent male looking for answers to life and love. In every novel, the protagonist's life was enhanced by content area knowledge, and, in at least two of the novels, by excellent content area high school teachers. All three novels are likely to entice many adolescents into content area conversations and have a place as possible supplemental texts in high school classrooms.

Content area literacy courses can be a place for pre-service secondary teachers to grapple with what adolescents should know in their content areas, how that information can be engagingly introduced and taught to adolescents, and to be become better prepared to become more student-centered teachers. They should also provide a context for pre-service secondary teachers to think about how the knowledge and teaching practices of their content area promotes or prevents social justice, particularly how content area literacy tasks can positively change society. But gaining student interest in content area knowledge and going beyond the metaphor of literacy as adaptation to literacy as a state of grace for students is important progress in showing students how literacy practices can make them more powerful human beings.



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